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KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

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| EXAMINER |
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KIELIN, ERIK J

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| ART UNIT | PAPER NUMBER |
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2813

DATE MAILED: 11/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/990,075

Applicant(s)

SHUTO ET AL.

Examiner

Erik Kielin

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,9,10 and 14-17 is/are pending in the application.
- 4a) Of the above claim(s) 14-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,9 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This action responds to the Amendment (Paper no. 7) and Substitute Specification (Paper no. 8), each filed 21 August 2003.

Election/Restrictions

1. Newly submitted claims 14-17 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claims 14 to 17 present new species drawn to specific monomers used to manufacture the homeotropic alignment liquid crystal film.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 14-17 are withdrawn from consideration as being directed to a non-elected species. See 37 CFR 1.142(b) and MPEP § 821.03.

Specification

2. The substitute specification filed 21 August 2003 has not been entered because it does not conform to 37 CFR 1.125(b) and (c) because: it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention.

3. The substitute specification filed 21 August 2003 has not been entered because it does not conform to 37 CFR 1.125(b) and (c) because: the statement as to a lack of new matter under 37 CFR 1.125(b) is missing, and because the substitute specification contains new matter.

The added material which is not supported by the original disclosure is as follows:

(Locations in the marked-up version are indicated):

On p. 2, line 17, “may be used” replacing “are known” is new matter because Applicant cannot, without evidence, state that the alignment agents indicated to be known are not now known;

In the paragraph bridging pp. 5-6, removing the phrases “containing liquid crystalline fragment side chain” and “containing liquid non-crystalline fragment side chain” is new matter because these phrases define the scope of the liquid crystal polymer, whereas the present amendment indicates any monomer units (a) and (b). Accordingly, Applicant is broadening the scope originally presented in the specification. These phrases must be returned to the specification.

On p. 44, line 24, the word “comprised” is new matter because it broadens the scope of “represented by.”

Applicant is required to cancel the new matter in the reply to this Office Action.

Failure to do so will result in a holding of non-responsive amendment.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1, 2, 9, and 10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not

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described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding independent claims 1 and 9, the original specification does not provide support that the liquid crystal polymer is “capable of homeotropic alignment solely by heating.”

(Emphasis added.) The liquid crystal polymer is capable of being homeotropically other means, such as magnetically, mechanically (e.g. pressure), optically, electrically, and with a plasma, electron beam. See the instant, original specification in the paragraph bridging pages 20-21 which expressly states that alignment by heating is only an example.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 2, 9, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,730,900 (**Kawata**).

Regarding claim 1, **Kawata** discloses a method for manufacturing a homeotropic alignment liquid crystal film comprising the steps of

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coating a side chain type liquid crystal polymer comprising a monomer unit (a) containing a liquid crystalline fragment side chain and a monomer unit (b) containing a non-liquid crystalline fragment side chain on a substrate on which a vertical alignment film is not formed (col. 4, lines 57-59), said liquid crystal polymer being capable of homeotropic alignment by heating (col. 2, lines 55-62; col. 31, line 64 to col. 33, line 3);

after the substrate is coated with the liquid crystal polymer which is in a liquid crystal state, homeotropically aligning the liquid crystal polymer by heating; and

fixing a resulting homeotropic alignment state of the liquid crystal polymer.

(See also col. 4, lines 22-30; col. 16, lines 57-64; and col. 34, lines 28-45.)

Regarding claim 2, **Kawata** discloses the method for manufacturing a homeotropic alignment liquid crystal film according to claim 1, wherein a material of said substrate is polymer or glass (col. 39, lines 30-36).

Regarding claim 9, **Kawata** discloses a method for manufacturing a homeotropic alignment liquid crystal film comprising,

coating a liquid crystalline composition on a substrate on which a vertical alignment layer film is not formed (col. 4, lines 57-59), said liquid crystal composition being capable of homeotropic alignment by heating and comprising a side-chain-type liquid crystal polymer and a photopolymerizable polymer liquid crystal compound (col. 2, lines 55-62; col. 31, line 64 to col. 33, line 3);

after the substrate is coated with the liquid crystal polymer which is in a liquid crystal state, homeotropically aligning the liquid crystal polymer by heating; and

fixing a resulting homeotropic alignment state of the liquid crystal composition; and
applying optical irradiation to the liquid crystal composition to fix the liquid crystalline
composition.

(See also col. 4, lines 22-30; col. 16, lines 57-64; and col. 34, lines 28-45.)

Regarding claim 10, **Kawata** discloses the method for manufacturing a homeotropic
alignment liquid crystal film according to claim 9, wherein a material of the substrate is polymer
substance or glass (col. 39, lines 30-36).

8. Claims 1, 2, 9, and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by US
6,379,758 B1 (**Hanmer** et al.).

Regarding claim 1, **Hanmer** discloses a method for manufacturing a homeotropic
alignment liquid crystal film comprising the steps of

coating a side chain type liquid crystal polymer comprising a monomer unit (a)
containing a liquid crystalline fragment side chain and a monomer unit (b) containing a non-
liquid crystalline fragment side chain on a substrate on which a vertical alignment film is not
formed (col. 15, lines 28-30), said liquid crystal polymer being capable of homeotropic
alignment by heating;

after the substrate is coated with the liquid crystal polymer which is in a liquid crystal
state, homeotropically aligning the liquid crystal polymer by heating; and

fixing a resulting homeotropic alignment state of the liquid crystal polymer.

(See col. 3, lines 50-65; col. 4, lines 15-25 and lines 41-67; paragraph bridging cols. 5-6;
and especially the example entitled "EXAMPLE 1A" beginning at col. 14.)

Regarding claim 2, **Hanmer** discloses the method for manufacturing a homeotropic alignment liquid crystal film according to claim 1, wherein a material of said substrate is polymer or glass (col. 4, lines 60-61; col. 15, lines 28-30).

Regarding claim 9, **Hanmer** discloses a method for manufacturing a homeotropic alignment liquid crystal film comprising,

coating a liquid crystalline composition on a substrate on which a vertical alignment layer film is not formed (col. 15, lines 28-30), said liquid crystal composition being capable of homeotropic alignment by heating and comprising a side-chain-type liquid crystal polymer and a photopolymerizable polymer liquid crystal compound;

after the substrate is coated with the liquid crystal polymer which is in a liquid crystal state, homeotropically aligning the liquid crystal polymer by heating; and

fixing a resulting homeotropic alignment state of the liquid crystal composition; and

applying optical irradiation to the liquid crystal composition to fix the liquid crystalline composition.

(See col. 3, lines 50-65; col. 4, lines 15-25 and lines 41-67; paragraph bridging cols. 5-6; and especially the example entitled "EXAMPLE 1A" beginning at col. 14.)

Regarding claim 10, **Hanmer** discloses the method for manufacturing a homeotropic alignment liquid crystal film according to claim 9, wherein a material of the substrate is polymer substance or glass (col. 4, lines 60-61; col. 39, lines 30-36).

Response to Arguments

9. Applicant's arguments with respect to claims 1, 2, 9, and 10 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erik Kielin whose telephone number is 703-306-5980. The examiner can normally be reached on 9:00 - 19:30 on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr., can be reached at 703-308-4940. The fax phone numbers for the

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organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Erik Kielin
Primary Examiner
November 8, 2003